

REMARKS

In accordance with the foregoing, the specification has been amended to improve form, and claims 1, 4-7, and 9-20 have been amended. Claims 1-20 are pending and under consideration. No new matter is presented in this Amendment.

OBJECTIONS TO THE CLAIMS:

On page 2 of the Office Action, the Examiner objects to claim 15 for various informalities. In view of claim 15 as presented above, it is respectfully requested that the Examiner reconsider and withdraw the objection.

REJECTIONS UNDER DOUBLE PATENTING:

On pages 3-6 of the Office Action, the Examiner provisionally rejects claims 1-20 on the ground of nonstatutory obviousness-type double patenting in view of selected claims of copending U.S. Patent Application No. 10/806,318. In view of the enclosed Terminal Disclaimer, it is respectfully submitted that the rejection be reconsidered and withdrawn.

REJECTIONS UNDER 35 U.S.C. §112:

On pages 6-7 of the Office Action, the Examiner rejects claims 1-20 under 35 U.S.C. §112, second paragraph, as being indefinite. The rejection is respectfully traversed, and reconsideration is requested.

While it is respectfully submitted that the claims as previously presented were compliant with 35 U.S.C. §112, second paragraph, the claims have been amended to replace the term "pulse" with "period" to be more consistent with the terminology used in the specification. Additionally, claim 14 has been amended as indicated. As such, it is respectfully requested that the Examiner reconsider and withdraw the rejection in light of the claims presented above.

REJECTIONS UNDER 35 U.S.C. §102:

On pages 7-10 of the Office Action, the Examiner rejects claims 1, 3-6, 11-13 and 15 under 35 U.S.C. §102(e) in view of Dekker (U.S. Patent Publication No. 2002/0003762). The rejection is respectfully traversed and reconsideration is respectfully requested.

By way of review, FIGs. 1A and 1B of Dekker show an erase pulse sequence 14 having a first erase pulse at a high level Pe and a last erase pulse at a bias level P1 or P2 according to the writing speed. The write pulse sequence 13 has a pulse at a level Pw, and a bias pulse at a level (unlabeled) below the bias levels P1 or P2 of the erase pulse (Paragraphs 0028 through 0031; Figs. 1A through 2). While Dekker shows the first erase pulse at the high level Pe,

Dekker does not suggest that a power level of the first erase is the bias levels P1 or P2.

On page 8 of the Office Action, the Examiner asserts that the first pulse of the erase pulse sequence 14 is actually at a low level below Pe or P1. However, it is respectfully submitted that the pulse referred to by the Examiner is the bias pulse of the write pulse sequence 13. This low bias pulse is below the level of the low power for the erase pulse sequence 14 (i.e., bias pulse P1 or P2), and is not suggested as being part of the erase pulse sequence 14. Thus, the pulse referred to by the Examiner does not correspond to the low power for the erase pulse sequence 14 and would not be so understood by one skilled in the art.

Additionally, while the Examiner asserts that the power level P1 corresponds to a high level of the erase pulse sequence 14 as compared to the bias level of the write pulse sequence 13, it is respectfully submitted that the power level P1 within the erase pulse sequence 14 is the low level as compared to the erase pulse Pe and would not be understood as the high level by one skilled in the art.

In contrast, claim 1 recites, among other features, "a recording waveform generating unit which generates a recording waveform having an erase pattern containing a leading pulse and a multi-pulse having a high power level and a low power level," with "a power level of the leading pulse of the erase pattern being the low power level of the multi-pulse" and "a power level of a period between an end point of the erase pattern and a start point of a leading pulse of the recording pattern being the high power level of the multi-pulse." As such, it is respectfully requested that the Examiner reconsider and withdraw the rejection in view of Dekker.

For at least similar reasons, it is respectfully submitted that Dekker does not disclose or suggest the invention as recited in claim 4.

Additionally, to the extent that the bias level of the write pulse sequence 13 extends between periods 11 and 12, it is respectfully submitted that the bias level of the write pulse sequence 13 in Dekker is also relied upon by the Examiner as being the low power leading pulse of the erase pulse sequence 14, and there is no suggestion of a further pulse or a further pulse having a level below the bias level of the write pulse sequence 13. As such, it is respectfully submitted that the bias level of Dekker does not disclose or suggest, among other features, "a cooling pulse concatenating the recording and erase patterns" as recited in claim 4, or "a cooling pulse having a cooling power level less than the low power level of the multi-pulse connecting the leading pulse of the erase pattern and another portion of the further multi-pulse of the another recording pattern" as recited in claim 5.

For similar reasons, it is respectfully submitted that Dekker does not disclose or suggest the features of claims 13 and 15.

Claims 3, 6, 9, 11, and 12 are deemed patentable due at least to their depending from corresponding claims 1 and 4.

On pages 10-11 of the Office Action, the Examiner rejects claim 19 under 35 U.S.C. §102(e) in view of Ichihara (U.S. Patent 6,396,792). The rejection is respectfully traversed and reconsideration is respectfully requested.

By way of review, Ichihara discloses a waveform of recording pulses having erasure steps Pc1 and Pc2 when an NRZI signal as shown in FIG. 1A is low. Ichihara also discloses recording pulses including recording steps Pc1, Pa when the NRZI signal as shown in FIG. 1A is high. While not labeled in FIG. 1B or specifically discussed in the specification, a pulse between the recording and erase steps has a level which is below the power level Pc1 (and appears to be Pc), and increases into a second pulse having a level of Pa. As such, the power level of the pulse between the recording and erase pattern is shown as less than the first pulse of the erase signal having the power level Pc1 and is not shown as being the high power level Pc1 used in the erase steps.

On page 10 of the Office Action, the Examiner asserts that col. 6, line 62 to col. 7, line 1 suggests that the power level of the pulse between the erase and recording patterns can be changed from Pc1 to Pa, thus indicating that this pulse can be of a power Pc1. However, while Ichihara shows the pulse which appears to be Pc, and increases into a second pulse having a level of Pa, there is no suggestion that this pulse is adjusted to other powers. Instead, as set forth in col. 6, line 64 to col. 7, line 1, adjustments are made to the timing and the bias power levels (Pc, Pc1, or Pc2) between the first pulse and off pulse of the amorphous mark, but not to the period before the first pulse of the amorphous mark. As such, the power levels discussed are related to the recording waveform as opposed to the pulse shown at power level Pc.

Therefore, it is respectfully submitted that Ichihara does not disclose or suggest, among other features, "a power level of the leading pulse of the erase pattern being the high power level of the multi-pulse and a power level of a period between an end point of the erase pattern and a start point of a leading pulse of the recording pattern being the high power level of the multi-pulse" as recited in claim 19.

REJECTIONS UNDER 35 U.S.C. §103:

On pages 11-12 of the Office Action, the Examiner rejects claim 2 under 35 U.S.C.

§103(a) in view of Dekker and Ichihara. The rejection is respectfully traversed and reconsideration is requested.

Even assuming arguendo that the Examiner's characterization of Ichihara is correct, the Examiner does not rely upon Ichihara as curing the above-noted deficiency of Dekker as applied to claim 1, from which claim depends. As such, it is respectfully submitted that the combination does not suggest the features of claim 2.

On pages 12-13 of the Office Action, the Examiner rejects claims 7, 8 and 10 under 35 U.S.C. §103(a) in view of Dekker and Clark et al. (U.S. 5,802,031). The rejection is respectfully traversed and reconsideration is requested.

Even assuming arguendo that the Examiner's characterization of Clark et al. is correct, the Examiner does not rely upon Clark et al. as curing the above-noted deficiency of Dekker as applied to claim of claim 1, from which claim 8 depends. As such, it is respectfully submitted that the combination does not suggest the features of claim 8.

For at least similar reasons as to why the combination does not disclose or suggest the features of claim 8, it is respectfully submitted that the combination does not disclose or suggest, among other features, "a recording waveform which includes first pulses to form the recording pattern in response to a first level of the input data and a leading pulse and a multi-pulse having corresponding high power pulses with a high power level and low power pulses having a low power level to form the erase pattern in response to a second level of the input data," where "a power level of the leading pulse being the low power level of the multi-pulse and a power level of a period between an end point of the erase pattern and a start point of a leading pulse of the recording pattern being the high power level of the multi-pulse" as recited in claim 7.

Claim 10 is deemed patentable due at least to its depending from claim 7.

On page 13 of the Office Action, the Examiner rejects claims 16-18 under 35 U.S.C. §103(a) in view of Dekker and Nakamura et al. (U.S. Patent 6,280,810). The rejection is respectfully traversed and reconsideration is requested.

Even assuming arguendo that the Examiner's characterization of Nakamura et al. is correct, the Examiner does not rely upon Nakamura et al. as curing the above-noted deficiency of Dekker as applied to claims 1 and 4, from which claims 16-18 correspondingly depend. As such, it is respectfully submitted that the combination does not suggest the features of claims 16-18.

On pages 14-15 of the Office Action, the Examiner rejects claim 20 under 35 U.S.C.

§103(a) in view of Ohno et al. (U.S. Patent No. 5,150,351) and Furumiya et al. (U.S. Patent No. 5,490,126). The rejection is respectfully traversed and reconsideration is requested.

By way of review, Ohno et al. suggests a pulse spacing period having narrow signals which alternate between a playback power level P_r and an erase power level P_b according to 1 and 0 states of a signal as shown in FIG. 4(a). (Col. 6, lines 4-51; Figs. 4A through 5(d)). The beginning pulse and the ending pulse within the 0 state are at a P_r level. There is further no suggestion that another power level exists between the 0 and 1 states of the signal in FIG. 4(a), or that the power level of such a pulse should be or is below the P_r level.

Similarly, to the extent Furumiya teaches edge shifting, Furumiya in FIG. 1(b) teaches that a constant erase power should be maintained prior to the first write pulse. Furumiya is not relied upon as teaching the use of a power level below the P_r level. As such, it is respectfully submitted that the combination does not disclose or suggest, among other features, "a cooling pulse having a cooling power level below the low power level and which concatenates the recording and erase patterns," and "a power level of the leading pulse of the erase pattern being the low power level of the multi-pulse and a power level of a period between an end point of the erase pattern and a start point of a leading pulse of the recording pattern being the low power level of the multi-pulse" as recited in claim 20.

CONCLUSION:

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

Serial No. 10/806,107

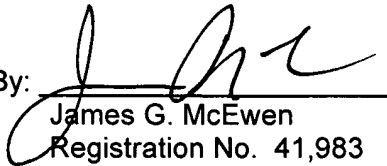
Docket No.: 1293.1278C2

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 503333.

Respectfully submitted,

STEIN, MCEWEN & BUI, LLP

Date: DEC. 26, 2006

By: 
James G. McEwen
Registration No. 41,983

1400 Eye St., NW
Suite 300
Washington, D.C. 20005
Telephone: (202) 216-9505
Facsimile: (202) 216-9510